

apparatus including a second reaction chamber adapted to house a substrate for film formation processing, or coupling a first reaction chamber to a second reaction chamber with a substrate site separated by a distance equivalent to the lifetime of nitrogen plasma ions at a plasma generation rate, such that nitrogen radicals react with the substrate in a film conversion step, as recited by Claim 1. Rather, Matsuo teaches that zero separation is best between a plasma generator and an etch chamber when nitrogen supplementation is contemplated.

Independent Claim 6 is also not anticipated by Matsuo because Matsuo does not describe an apparatus for film formation processing or means for providing a plasma from a nitrogen gas to the reaction chamber free of ions such that the radicals would react with a substrate in a film conversion step. As noted above with respect to independent Claim 1, Matsuo does not describe a film formation environment or that nitrogen radicals are separated from nitrogen ions in order to react with a substrate in a film conversion step.

B. 35 U.S.C. § 102(b): Rejection of Claims 17-20

The Patent Office rejects Claims 17-20 under 35 U.S.C. § 102(b) as anticipated by Moslehi.

Applicants reiterate that independent Claim 17 is not anticipated by Moslehi because Moslehi does not describe a system including a first reaction chamber and a second reaction chamber wherein the first reaction chamber is separated from the second reaction chamber by a distance suitable to deliver a plasma to the second reaction chamber substantially free of ions to react with a substrate in a film conversion step, as set forth in Claim 17. Rather, Moslehi teaches delivering both charged and neutral species to a process chamber. Independent claim 17 is directed at minimizing "charged" species by the structural limitation of separating the plasma generation chamber ("first chamber") from a substrate site by a distance equivalent to the lifetime of ions.

C. 35 U.S.C. § 103(a): Rejection of Claim 5

The Patent Office rejects Claim 5 under 35 U.S.C. § 103(a) as obvious over Matsuo in view of Yamazaki.

Applicants reiterate that Claim 5 depends from Claim 1 and contains all of the limitations thereof. Thus, Claim 5 is not obvious over the cited references in combination because the references fail to disclose or provide motivation for an apparatus including a second reaction chamber adapted to house a substrate for film formation processing, or coupling a first reaction chamber to a second reaction chamber with a substrate site separated by a distance equivalent to the lifetime of nitrogen plasma ions at a plasma generation rate, such that nitrogen radicals react with the substrate in a film conversion step.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending (1) are in proper form, (2) are neither obvious nor anticipated by the relied upon art of record, and (3) are in condition for allowance. A Notice of Allowance is earnestly solicited at the earliest possible date. If the Examiner believes that a telephone conference would be useful in moving the application forward to allowance, the Examiner is encouraged to contact the undersigned at (310) 207-3800.

If necessary, the Commissioner is hereby authorized in this, concurrent and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly, extension of time fees.

Respectfully submitted,

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Dated: 1/31, 2002

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CERTIFICATE OF MAILING:

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: BOX RCE, Assistant Commissioner for Patents, Washington, D.C. 20231, on January 31, 2002.

Nadya Gordon 1/31/02
Nadya Gordon January 31, 2002